Challenges and Considerations in Optimizing Stimulation Protocols

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ART really is an art. Ovarian stimulation involves a thorough understanding of the inner workings of the hypothalamic-pituitary-ovarian (H-P-O) axis and then, figuring out ways to manipulate it using some of the gonadotropins at our disposal. Unfortunately, clinicians are unable to change the physiology of the ovary or create gametes...yet!

Currently, we are limited by the fact that women are born with a finite egg supply, determined in utero and utilized over decades. These eggs are arrested in development whilst they await their turn to enter the pool of developing follicles and fulfill their destiny. Following puberty, and maturation of the H-P-O axis, developing follicles get a chance to complete their journey of maturation and enter the race for ovulation. As one can see, the efficiency of this whole process is abysmal with only a fraction of the 5 million eggs that populate the ovaries ever having a chance to ovulate as a mature egg and getting a chance to be fertilized. Understanding how to manipulate this process to our advantage and maximize the yield of mature oocytes in a woman desiring to preserve her future fertility or achieve a pregnancy is critical to improving ART outcomes. Using all of the key gonadotropins and hormones (or antagonists/blockers), this presentation will review the use of FSH, LH (hCG), HCG, GnRH agonists and antagonists, estrogen and OCP pre-treatment, oral agents like estrogen receptor modulators or aromatase inhibitors and different ways of tricking Mother Nature to improve the odds.